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### Abstract

Why do voters finance the candidates, even the out-of-district one? Previous studies suggest physical closeness, ideological appeal, material gain, and personal resource. Yet studies based on self-report survey or aggregate-level post-election data blur the causal linkage between candidate's appeal and voters' motivation. In this article, we combine and exploit two unique datasets from a candidate in 2014 Taiwan City Mayor Election: one includes 14838 detail donation records, the other includes the candidate's all 296 Facebook posts during the campaign. We firstly replicated previous findings in district-level that physical closeness and ideology influence donation. In post-level, however, we find that neighboring effect does not build on spillover of public policy or administrative reform. Instead, residents and neighbors donate more merely because they are much likely to be mobilized. Meanwhile, candidate's ideological posts can successfully increase donations within few hours from the districts where more voters are on the same side.

<b>Keywords</b>	Campaign Donation, Campaign Contribution, Political Communication, Social Network Site, Taiwan Politics
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# **Mobilizing Sophisticated Donors: What Candidate Posts Do Attract Intra- and Inter-district Donations?**

## **Abstract**

Why do voters finance the candidates, even the out-of-district one? Previous studies suggest physical closeness, ideological appeal, material gain, and personal resource. Yet studies based on self-report survey or aggregate-level post-election data blur the causal linkage between candidate's appeal and voters' motivation. In this article, we combine and exploit two unique datasets from a candidate in 2014 Taiwan City Mayor Election: one includes 14838 detail donation records, the other includes the candidate's all 296 Facebook posts during the campaign. We firstly replicated previous findings in district-level that physical closeness and ideology influence donation. In post-level, however, we find that neighboring effect does not build on spillover of public policy or administrative reform. Instead, residents and neighbors donate more merely because they are much likely to be mobilized. Meanwhile, candidate's ideological posts can successfully increase donations within few hours from the districts where more voters are on the same side.

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## 1. Introduction

Individual donations to candidates had become one of the most important phenomena in campaigning process. In 2008 election cycle, individual contributions constituted 90 percent of the total donations (Fremeth et al. 2013). According to the OpenSecret website, in the 2010 Congressional Election individual donations also accounted for 61 percent of total funds candidates received.<sup>1</sup> The number of small donors, which the donation is less than \$200 and did not be itemized in the dataset of Federal Election Commission (FEC), also raised dramatically in recent years. In the 2016 Presidential Primaries, Sanders, Carson, and Trumps have raised 60 percent or more from small donors.<sup>2</sup> The number of individual donors has increased from 6 % to 13 % since the 1990s (Johnson 2013).

Why do individuals finance the candidates? The paradox of voting suggests that it is irrational to vote since the costs of voting exceed the expected utility coming from the election. It would be much irrational for an economic man to contribute to candidates since the cost of donation is much perceivable than the time cost spent in the booth and during transportation. The assumption of *homo economicus* deviates further when we take into account the inter-district donation, in which the donors live outside of the district that candidate will represent. Based on the FEC data from 1996 to 2004, congressional candidates receive, in average, more than two-thirds of individual donations from other districts (Gimpel et al. 2008). The unneglectable inter-district donation also calls into question to whom do candidates *de jure* and *de facto* represent after elected.

Previous studies exploiting surveys and FEC datasets had made considerable contributions on explaining this seemingly irrational behavior among voters. On the one hand, donors self-reported that ideology, partisanship, resource, and personal identity are important motivations for individual's decision to contribute (Francia et al. 2003; Johnson 2013; Barber 2016).<sup>3</sup> Especially, Barber et al. (2015) combine a survey of individual donors, their demographics from FEC data, and legislative records of incumbents as well as part of challengers. They reveal that the both the matching between donor's policy preferences to legislator's roll calls and between donor's occupation to legislator's committee membership significantly influence intra- and inter-district donations. On the other hand, district- and candidate-centered analyses indicate that candidates with

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1 <https://www.opensecrets.org/resources/dollarocracy/04.php> Search Date: June 22, 2016

2 <http://www.cnn.com/2015/10/23/the-hot-new-thing-for-2016-getting-small-donors.html>

Search Date: June 22, 2016

3 Based on ANES datasets from 1972 to 2008, however, La Raja and Wiltse (2011) suggest that ideological extremism is not a strong predictor of donation. The hand-in-hand between the increases of ideological polarization and individual donations may come from the increase in the number of voters with extreme ideology.

extreme ideology and running in the competitive district can receive more from the district, neighboring area, and from wealthier districts (Gimpel et al. 2006; Gimpel et al. 2008; Johnson 2013; Mitchell et al. 2015).

Unfortunately, existing data limits us from further clarifying the relationship between donor's motivations and related behaviors. First of all, previous studies merely treat the whole campaigning process as one point, and candidate's running in the election as one move. Individual donation data was summed up after each election and was then used to find correlations with the characteristics of districts or demographics of the donors. However, the most important part distinguishing donation and voting are that donation can be done anytime and anywhere before the Election Day. To vote correctly on the Election Day, people need to update from incoming information timely, or remember all details during the campaign; in contrast, people can simply click the "Donation NOW" button when they agreed with the newest policy proposal the candidate posted on her website. The campaign is the dynamic process that voters get familiar with the candidates, especially the challengers (Jacobson, 1978). What candidates performed and media coverage would influence people's willingness to contribute (e.g. Mutz, 1995). If we can track how different donors respond right after the various announcements that candidates made, the causal relationship between donors' motivations and behaviors can be better understood.

Second, studies based on FEC datasets usually drop the small donors owing to lack of detail information. The problem may not be serious in previous studies because small donors (donation less than \$200) only account for 10 to 12 percent of candidate's total funds between 2000 and 2004 election (Gimpel et al. 2008). A working paper also suggests that small and large donors share similar motivations (Maglaby et al. 2015). However, as is mentioned at the beginning, the number of small donors surged in recent elections, so as its importance; three-fourth of Sander's fund and two-third of Carson's fund are from small donors. Moreover, the \$200 criteria should influence whether some people is willing to donate more or not. To pursue comprehensive explanation toward donation behavior, the small donors should be included in the analysis.

To tackle the two challenges above, we exploit a unique dataset generously provided by a city mayor candidate W, who ran, and eventually won in a major city mayor election in Taiwan on November 29, 2014. The dataset includes the second-by-second record of all individual donations through the Internet since the candidate started raising fund on May 14, 2014. During the six months of the campaign, overall 14838 donors finance the candidate online, and the total amount of donation was New Taiwan Dollar (NTD) \$ 31414658 (about one Million USD). Among the donors, 9534 are from out-of-district, accounting for 64.7 percent of all donors and 57.7 percent of total contributions. The record we received from the candidate includes the amount of each donation, the exact time of payment, name, and the address of the donors. Owing to the requirement of anonymity by the candidate W, the name and full address was removed before sending to us, but we can still locate each donor to county and village level.

Besides, the 2014 Mayor election we will focus here is open-seat, and the candidate who provided dataset was a challenger from the opposite camp (Democratic Progressive Party, DPP hereafter) who competed with another candidate from the incumbent party (Kuomintang, The Nationalist Party, KMT hereafter). Candidate W attracted more than half donations from other districts and eventually won the city mayor election with the aid of the donation, so we believe that this unique but generalizable case is implicative to many small parties and challengers in democracies and partial democracies throughout the world.

This detail donation dataset was then sorted with all 296 Facebook posts the candidate made during the six months of the campaign in the city mayor election cycle. Facebook is the most widely used social network site in Taiwan, with 78% of the total population registered by 2015,<sup>4</sup> and has become one of the most important channels for news consumption and election campaigns in Taiwan (Wang, 2013). By doing so, we made a strong assumption that the post right before each donation should be the main reason why donor clicked the donation button. This assumption can be challenged since not everyone followed the candidate's Facebook post so closely. Figure 1 is the distribution of the time difference between each post and the donation right after the post. The mean and median of the time difference between the posts are 15.3 and 12.5, respectively. However, 29 percent of the total donations was made within 2 hours after the posts, 78.7% of the donation came within 15.3 hours after the post, and the median of the post-donation time difference is 4.4 hours. Thus, it is reasonable to assume that the post before donations is the most top-down influential factor sent by the candidate to all potential donors.

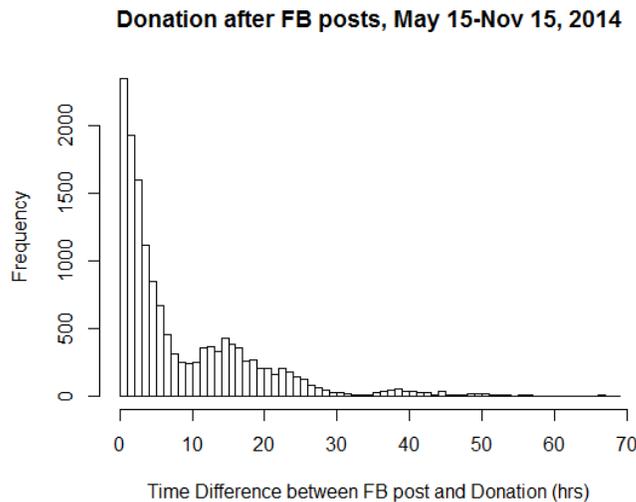


Figure 1. Time Difference between Candidate's Facebook posts and Donation followed

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4 <http://www.internetworldstats.com/stats3.htm#asia> Search Date: June 23 2016

The combination of Facebook posts by candidates and donation record enables us to further connecting donor's motivations and behaviors, in both intra- and inter-district perspectives. In this article, we plan to revisit two hypotheses suggested in previous studies: material gain and ideology. On the one hand, previous studies indicate that material gain such as social welfare and infrastructure can be the economic reason of individual donations; the spillover effect of these policies can also benefit the residents in neighboring districts. If it is the case, then we should observe that the individual donations from the district, and from the nearby districts should increase after the candidate announced related policies and benefits. On the other hand, if it is the ideology motivates donation, we should observe that donation from the districts with more people share the same ideology with the candidate should increase after the candidate made ideological arguments. The newest content that the candidate posted is much likely to be the "what appears in donor's head" as the main motivation when clicking the Donate Now button.

To our knowledge, it is the first study linking individual donations and posts of the candidate and conducting the analysis using down to an hour as a unit. Hong (2013) and Lessen and Egar (2013) also analyzed the relation between candidate's Twitter usage and campaign financing. However, both of the studies treat all tweets as the same and only coded whether Congressional candidate adapted Twitter account or how many tweets candidate sent during the whole campaign. The only study closed to the methodology we proposed here is Sides and Farrell's (2010) analysis on Daily Kos. They use the weekly donation data combined with the posts on this famous blog and found that each recommendation on the blog could boost 1.2 donations and about \$1200 to the candidate mentioned. As is suggested by Figure 1, one week may still be too long to build a causal relationship between the post and the donation; it can also be the reason that the average effect of the post is so small owing to the noise accumulated throughout each week. One study on Obama's 2012 Facebook campaign shows that netizens are quite responsive to the content that candidate posted (Gerodimos and Justinussen 2015). If the candidate posts something that can motivate donors to contribute, they should also respond very soon. This form of interactions can only be revealed through the two datasets combined in this article. However, the donation dataset used here does not include the basic demographics of donors except the address, nor does it include self-reported ideologies or party identification, so the inference is also limited.

In the next section, we will discuss the relationship between the campaign, social network site, and donations; four falsifiable hypotheses will then be suggested based on the discussion. Section 3 will briefly introduce the background of this city mayor election in Taiwan. Section 4 provides the introduction of the two datasets we use, as well as descriptive analysis of the datasets. Section 5 will firstly conduct district-level analysis to replicate the findings in previous studies based on the U.S. context; the latter half will then move to post-level analysis, exploring the relationship between the content of each post and in- and out-of-district donor's reactions within several hours after each post. The last section will juxtapose the results revealed in this article and previous studies, and

discuss its implication to party nationalization, the rationality of donation, and campaign finance in the Internet Age.

## **2. Expectation, Distance, and Strategy**

Expected utility is the outcome times the probability of happening. Derived from the economic man assumption, people donate because their perception of expected utility increased. The outcomes include both material gains and ideological pursuit, while the probability is the chance that candidate will win the election and whether the donor can enjoy the outcome. At the beginning of the election cycle, voters may not know the candidate well, especially the challengers. With campaign goes by, the candidate makes policy announcement and declares his or her ideology through mass media, event, and social network site; meanwhile, voters can update their perception of the candidate, as well as toward the expected utility after the election.

Thus, four interrelated factors are influencing the calculus of expected utility in a local election and intra- and inter-district donation: policy, ideology, distance, and the chance of winning. First of all, when the candidate in the local announces a new policy proposal, donors who will benefit from the policies should increase their willingness to finance the candidate because they want the candidate to win the election. Among the out-of-district voters, meanwhile, their probability of enjoying the policy outcome is proportional to the distance to the district. For example, if the city mayor candidate vowed to build a new park or improve the traffic, it will benefit not only the resident but also those who live nearby the district. As a result, the out-of-district donation should also be proportional to the distance to the district. Numerous studies had suggested that neighboring is one of the significant factors for explaining inter-district donation based on post-election FEC data (Gimpel et al. 2006; Gimpel et al. 2008). If it is the spillover effect of policy in local election drives the neighboring effect, we should observe that the candidate received more donations from his or her district and nearby districts after the candidate mentioned policies or benefits to the district.

*H1: The donations candidate received from districts are negatively correlated with the distance of candidate's district to the others.*

*H2: After the candidate announced policies, the candidate should receive more donations from the district and nearby districts compared to after making other announcements.*

Another well-discussed motivation of attracting intra- and inter-district donations is ideology. In individual level, Johnson (2013) analyzes the ANES data from 1984 to 2010 and reveals that respondents with extreme ideology are much likely to donate. Barber and colleagues (2014; 2016) conducted surveys to 20500 donors listed in FEC dataset. They then matched donors' policy positions to the roll call voting of the

incumbents and some of the challengers in the 2012 Senator election and revealed that donors tend to finance the candidates who have higher policy agreement to the donors – even the candidates are out-of-district. In the aggregate level, Gimpel and colleagues (2006; 2008) found out that donors tend to finance Republican/Democrat candidates if his or her zip code locates in the area with more Republican/Democrat voters. Besides, candidates from minority or underrepresented group rely much more on out-of-district donations. Bonica (2014) even assumes donor's ideology to be the indicator of candidates' ideology position.

The major difference between candidate's policy and ideology announcement is that the latter one transcends the physical limitation. Donors will support their ideological allies even they are a thousand miles away. With the advance of information technology, even a recommendation on a liberalism website can significantly increase candidates' donation throughout the country (Sides and Farrell 2010). Thus, the distance may play a minor role in influencing ideological donor's support to an out-of-district candidate who shared a similar ideology. How do ideological donors maximize their utility? We assume that donors want more candidates of their side to win the election. Therefore, they will juxtapose the level of competitiveness of their district and other districts, and then strategically send the money to the competitive one – where their donations may play the pivotal role in winning more seats. For example, Gimpel and colleagues (2008) found that candidates in competitive districts are much likely to receive the inter-district donation.

If ideology drives donation, the effect should be the strongest right after the candidate mentioned it. Meanwhile, the effect is conditioned by the strategic consideration of the donors. Based on the discussion above, the next three hypotheses linking candidate's post, ideology, and competitiveness would be:

*H3: Candidate received more donations from the districts where more voters are sharing a similar ideology.*

*H4: Candidate received more donations from districts which are non-competitive.*

*H5: After the candidate posted ideology-related content, the candidate should receive more donations from the districts where more voters are sharing similar ideology, compared to after making other announcements.*

At the first sight, *H3* and *H4* give different predictions to the districts with fewer ideological allies, but they are not mutually exclusive and can coexist. Considering the scenario that some districts have more residents but the distribution of ideology is half-half, while the other districts have fewer residents but are much biased. Big and competitive districts have more people than the small ones, so the expected number of donations can be higher. Meanwhile, people in the small but non-competitive districts

already know the outcome of the election before the Election Day, so they can strategically transfer their prepared donation to other much competitive ones.

By combining the detail donation dataset and the candidate's posts on the Facebook page, we are enabled to revisit the hypotheses suggested by previous studies, and provide a direct examination empirically.

### **3. Taiwan Politics and the Case of 2014 City Mayor Election**

Taiwan was ruled by Japan in the period between 1895 and 1945 and was then return to the Republic of China (ROC hereafter) led by KMT in 1945. Four years later, KMT government was defeated by the communist party and retreated to Taiwan. Since then, Taiwan started its autonomy under the martial law of KMT for thirty years. After the island abandoned the martial law and started the democratization process, attitude toward China is always the most salient issue. Under the plural and presidential system, there are two major political coalitions in Taiwan: pan-blue and pan-green camps. The pan-blue camp is led by KMT, which shares the perspective of "greater China" even its loss in 1947, and is, therefore, pro-unification with China. In contrast, the pan-Green camp was led by DPP, seeking a more independent status of Taiwan, and arguing that Taiwan should be cautious when interacting with China. In 2000, the DPP won the presidential election for the first time, but KMT still secured the majority in the Congress (Legislative Yuan). In 2008, KMT won both the Presidential and Congressional elections. KMT President Ma won the reelection in 2012 but only got 51.6 percent.

The pan-blue camp also ruled the city we study in this article before the 2014 city mayor election. The incumbent completed two terms and reached the term limit, so the election is open-seat, and the pan-blue camp also assigned one experienced candidate to run. Before the 2014 election, the pan-blue camp owned 16 of 22 districts, while the pan-green camp has the remaining 6, mostly in the southern Taiwan.

The 2014 Mayor election in Taiwan is especially suitable for examining the five hypotheses in this article for several reasons. First of all, before this election, Taiwan had experienced 5 Presidential elections and two turnovers in 2000 and 2008; election had become a regular practice in this island, so the empirical results in this article may extend to other contexts. Second, it is the election firstly held after the Sunflower movement, one of the biggest social movement against free-trade agreements with China in March 2014. This movement would undoubtedly make the ideology about (re)unification-independence issue salient during the campaign, so the effect of ideology is easier to be measured under this scenario. Third, Taiwan is ranked 19 on transportation and related infrastructure by Work Bank in 2014,<sup>5</sup> and citizens can easily work or move to other cities and counties; hence, the spillover effect of policy announcement during the campaign can also be amplified. Fourth, the majority of Candidate W's donors are small donors, so the exploration of their behaviors can fill the gap widely ignored in previous

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5 <http://ipi.worldbank.org/international/global?sort=asc&order=Infrastructure#datatable> Search Date: June 25, 2016.

studies. In the end, Candidate W won the city mayor election by a considerable margin as a challenger (in both local and national level) who relied heavily on individual donations, so the analysis to its donors has significant implication and encouragement to candidates and small parties around the world.

#### **4. Data and Method**

##### *4.1 Individual Donation*

Candidate W started its campaign in early 2014, and raised fund since May 14, 2014. During the six months of the campaign, overall 14838 donors finance the candidate online, and the total amount of donations was New Taiwan Dollar (NTD) \$ 31,414,658 (about one Million USD). Among the donors, 9534 are from out-of-district, accounting for 64.7 percent of all donors and 57.7 percent of total contributions. According to the election rule in Taiwan,<sup>6</sup> the ceiling of individual donation is NTD one hundred thousand, and the limit of anonymous donation is NTD ten thousand. In Candidate W's dataset, 13884 in 14731 donors were small donors (94.3 percent), but their home address was also collected during the donation process originally for sending a receipt. Therefore, in the dataset, we have the time, amount, and the address (to county and village level) of each donation, but not the sociodemographic background of the donors. The mean and median of individual donations are 2119 and 1000, respectively. The majority of donors donated NTD \$1000 (4742, 32.0%), \$500 (3090, 20.8%), and \$300 (3147, 21.2%) during the election cycle.

##### *4.2 Distance between Candidate and Donors in Local Election*

To estimate the spillover effect of public policies and social welfare, previous studies usually use contiguity as the measurement: the binary variable is coded one if the two districts share boundaries. However, this measure usually simplifies the geographical complexity of the real world. For example, Taichung and Hualien, two counties in central Taiwan, are contiguous to each other on the map. However, residents in the two counties rarely travel to the other side because on the boundary exists the *Central Mountain Range*, which the height is over 10000 feet. The only highway between the two counties was broken by Earthquake in 1999 and was never repaired since then. One possible alternative is the Euclidean distance between the two areas, but its application is also limited to the country with mountains and canyons. For instance, the distance between the downtown of Taichung and Hualien is about 60 miles, which is the close to the distance between Taichung to the Taoyuan, another county in northern Taiwan and is not contiguous to Taichung. However, according to the Google Map, it takes about 80 minutes for people to drive from Taichung to Taoyuan, but about 300 minutes from Taichung to Hualien in order to circumvent the mountains. Therefore, neither contiguity

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<sup>6</sup> <https://sunshine.cy.gov.tw/GipOpenWeb/wSite/ct?xItem=4912&ctNode=280&mp=2>

Search Date: June 24, 2016

nor Euclidean distance can capture the idea of the spillover effect of public policies and social welfare in the eyes of the out-of-district donors.

To estimate donor’s perception of benefiting from candidate’s policies in the future, we use the Google Map to estimate the *driving time* during the daytime of weekday between each donor’s address (to county level) and the main station of the city which the Candidate W ran for mayor. As is discussed above, the distance between Taichung and Hualien is therefore coded as 300 minutes instead of 60 miles, and residents to their city are 0 minutes. The assumption behind this measurement is that the less time spent on reaching the district, the more likely individual donor can enjoy the public good and service provided there. To simplify our hypothesis testing, we dropped 40 donations (0.27%) which the address is not clear enough for estimation.

#### 4.3 Candidate W’s Facebook Posts during Fund Raising

Starting from May 14, Candidate W posted 296 on his official Facebook page. Starting from the two categories – ideology and public policy – that derived from hypotheses, we broadly categorized the 296 articles into five overlapping categories, as is shown in Table 1. Some posts are assigned to more than one category if the content includes numerous characteristics. The categorization is close to Gerodimos and Justinussen’s analysis (2014) on Obama’s Facebook campaigning, but some edits are made to fit Taiwanese politics mentioned before.

Table 1. Categorization of Candidate W’s Facebook Page

Category	Explanation	Number of Posts (%)	Average length (s.d.)
Public Policy	Infrastructure, Social Welfare, Transportation, Innovation and Technology, Healthcare, Sport	57 (19.3%)	243.5 (235.1)
Ideology	Supporting independence, anti-China, cultural localization, in memorial of pro-independence celebrities and fighters for autonomy	49 (16.6%)	513.2 (397.7)
Campaign Mobilization	Campaign events and rallies, call for donation, call for volunteer, campaign materials and online shop, get-out-and-vote	94 (31.8%)	249.1 (224.1)
Self-promotion	Personal experience, share family life and members, attack the opponent, defend the mudslinging, visiting prestigious firms and companies	95 (32.1%)	331.3 (426.3)
Administration	Enhance Transparency, Efficiency, welcome democratic deliberation and participatory budgeting	39 (13.2%)	337.3 (251.7)
Uncategorized	Pray for victims of accidents, opinion of the citizens (without endorsement),	45 (15.2%)	75.9 (112.9)

	normal photos, visiting normal sites		
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Before moving to the details of each category, we would like to explain why we choose the old-fashioned method to code the posts manually. First of all, the number of posts that Candidate W posted on its Facebook page was not large, making it harder to assign training and testing sets. Second, during the campaign, it is highly possible that the wordings of posts are entirely different, but their meanings to our research interest are close. For example, Candidate W supported renewing infrastructure in post A and then suggested building social housing in post B. Both policies are left-leaning and may motivate the lower class. However, since the two posts were discussing the details of each policy respectively, the wordings of these two posts may be entirely different. During the campaign, Candidate W announced about thirty various policies, which can hardly be classified into the same category by machine-learning. To ensure that our categorization is reliable while protecting our source of datasets, we can provide the coding of the posts upon request.

The first category is public policy related to the city Candidate W ran for the mayor, such as public daycare, social housing, financial aid for elder care, and public performance space. The variable *Public Policy* for each post is coded one if the post includes the announcement of social welfare. Liao and Chen (2016: Chp 3) conducted surveys of many policy preferences to all congressional candidates in Taiwan in the 2012 election and then used principal component analysis to reveal that there is no meaningful left-right distinction in Taiwan politics even in elite level – almost all candidates in Taiwan are left-leaning. Instead, independence-unification dimension serves as the main political cleavage in the campaign. Even though Candidate W enumerated numerous left-leaning policies during the campaign, the left-leaning policies may not be used to mobilize left-leaning voters inside and out of districts. The second theoretical-driven category is independence-unification ideology. Since Candidate W is from the pan-green camp, the variable *Ideology* is coded one if the post includes anti-China ideology such as opposing free trade with China, supporting social movements in Hong Kong, visiting the memorial sites of pro-independence celebrities, or supporting Desinicization. Posts categorized in the *Public Policy* and *Ideology* will be used to test *H2* and *H5*.

The third category is *Campaign Mobilization*, coded as one if Candidate W asked the supporters to join the campaign events, promoted campaign materials, or called for volunteers. During the campaign, it is not surprising that most of the posts on Facebook includes such contents (99 in 296, 31.8%). The fourth category *Self-Promotion* is coded as 1 when Candidate W discussed its family members, past working experience, and met with prominent figures with no salient political tendency such as famous athletes, artists, and poets. During the campaign, Candidate W's personality and experience were attacked by opponents, so its defense and attack back are also coded in this category. In the end, the last category is *Administration*, in which Candidate W acclaimed to renew the administration system to be more transparent, open, and efficient. We distinguish between the administration and public policies by its direct influence to residents and non-residents: people may not be directly benefited by administrative reform, so it can hardly

be added into the calculation of expected utility (compared to subsidy and other public goods).

One potential threat to the post-donation analysis is that the number of posts in each category may differ across time; therefore, some posts may attract more donation merely because they were posted at the right time instead of the right content. As is already discussed in Figure 1, however, the majority of donations were sent right after posts appeared on the official site. Moreover, Figure 2 shows the distribution of posts in each month. During the seven months, there is no particular pattern linking time and the posts. Posts in all categories increased during September and October and decreased before the Election Day. The dataset here makes it possible to explore the dynamic between candidate’s strategies, polls, and donations (e.g. Mutz 1995), but it is not the main research interest in this article so that we will put them in future studies.

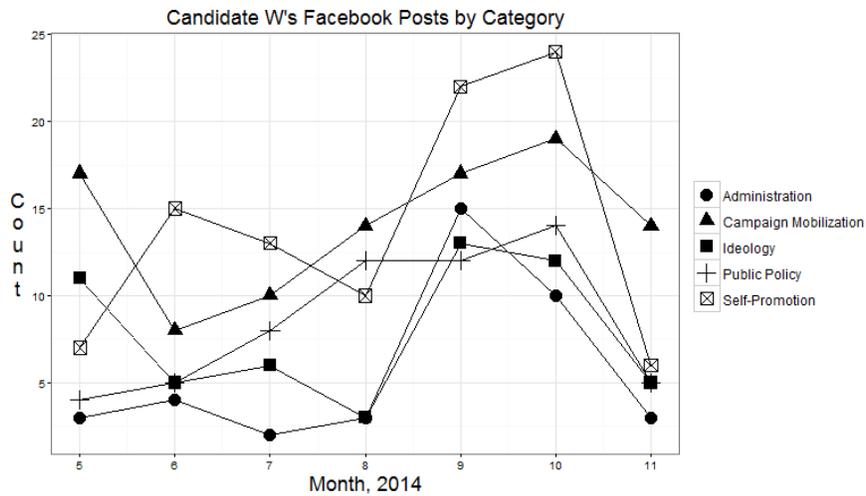


Figure 2. Distribution of Candidate W’s posts across time

#### 4.4 Methods

To examine the five hypotheses, we plan to conduct both district-level and post-level analysis. First of all, the majority of previous studies in campaign donation and inter-district donation use district as the unit of analysis and treat the election as a whole (e.g. Gimpel et al. 2006; 2008; Hong 2013). To replicate the results of previous studies on neighboring effect and ideological mobilization, Candidate W’s donors will assign to the 22 districts in Taiwan based on their address, and their distance to Candidate W’s district is measured by Google Map.

There will be two dependent variables in the district-level analysis: (1) Number of donors in each district (2) Total amount of donation in each district to examine *H1*, *H3*, and *H4*. Three independent variables are put into regression models: (1) Distance from

districts to Candidate W's district (2) The number of pan-green voters<sup>7</sup> (3) Competitiveness of the district - the abstract value of the proportion of pan-green voters minus 0.5. Owing to the distribution of donors and donations, negative binomial regression model will be used to fit the first and third dependent variables given their count coding and possibility of over-dispersion. To control for the resource of each district (Gimpel et al. 2006; 2008), we add individual median income in each district into the models.

On post-level analysis, we firstly assumed all donations after Post  $i$  and before Post  $i+1$  are caused by Post  $i$ . In Figure 1, 29 percent of the total donations was made within 2 hours after Candidate W's posts on its official Facebook site, and 78.7 percent of the donation came within 15.3 hours after the posts (the mean time difference between two posts). After linking posts and donation, we then create ten different dependent variables for examining  $H2$  and  $H5$ . First of all, the number of donors and the amount of donation after each post is calculated. Then, the two numbers for each post are then separated into four different groups: in-district, out-of-district, from pan-green districts (pan-green candidate got at least 55 percent of the vote in 2014 Mayor election), and from pan-blue districts (pan-blue got 55 percent or more). Distinguishing the donations from the district and out-of-district helps explore whether candidate's policy announcement is more attractive to residents, as is discussed in  $H2$ . Moreover, separating donation from pan-blue and pan-green district enables us to estimate the effect of candidate's ideological speech on raising funds from its allies all over the country.

Because the ten dependent variables are an integer, the negative binomial model is used again to avoid over-dispersion. The independent variables are the characteristics of Candidate W's announcement: the five features listed in Table 1 includes *Public Policy*, *Ideology*, *Campaign Mobilization*, *Self-Promotion*, and *Administration*, are added into the models. Moreover, the length of each post and the number of days before the election when the post was added are also included into regression model for control.

## 5. Results

### 5.1 District-level Analysis

Table 2 presents the results using district-level characteristics to explain the number of donors and amount of donations. In the aggregate level, districts are much likely to have donors if the district has more pan-green voters, higher median individual income, and is closer to Candidate W's district. When we change the value of *Distance* from 0 minutes (resident) to 350 minutes (the longest distance) while setting other values at their median, the predicted number of donors based on Model 1 will decrease from 299 to 141, and the amount of donation would decrease from NTD \$568295 to \$266662.

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<sup>7</sup> Pan-green voters is defined by the number of votes pan-green candidate got in each district in the 2014 Mayor election. Data can be found on Central Election Commission in Taiwan (<http://www.cec.gov.tw/bin/home.php>). Search Date: June 13, 2016.

Similarly, if we stimulate the value of *Number of Pan-green voters* from 10000 to 20000, the number of donors will increase slightly from 158 to 161, while the donation grows from NTD \$301618 to \$306548.

Therefore, geological closeness, ideology, and individual resource seem to be influential to donation behavior, which is consistent with the assumption of rationality as well as the results of previous studies using House and Senate election FEC datasets (Gimpel et al. 2006; 2008). Another similarity is that it is harder to explain the amount of donation (Barber et al. 2014). Both closeness and resource are not strong indicators on explaining the amount of donation from the districts.

Meanwhile, the level of competitiveness fails to help account for the variation in donation behavior. The result may imply that there is no salient strategic donation among Taiwanese people in this mayor election. Another possibility is because Candidate W also won by a considerable margin, so it is possible that pan-green supporters had no incentive to donate strategically in this scenario.

To sum up, in the district-level analysis, empirical data from Candidate W's dataset in 2014 Mayor election in Taiwan can support *H1* and *H3*. Since we can extend the results of previous studies to this particular case, the next question is that whether it was Candidate W's announcements on public policy and ideology that pushed donors from all districts to click the donate button. Do neighboring and ideology effect exist because of candidate's announcements? This deeper analysis can help us take a closer look at how people respond to candidate's request and reexamine the argument based on the aggregate-level analysis.

Table 2. Negative Binomial Model on Explaining Donation to Candidate W by District

IVDV	Number of Donors	Donors (out of district only)	Amount of Donations	Amount (out of district only)
<i>Distance between Districts</i>	-0.0019 * (0.0009)	-0.0022 * (0.0009)	-0.0019 (0.0013)	-0.0022 + (0.0013)
<i>Number of Pan-green Voters</i>	$1.73 \times 10^{-6}$ *** ( $2.27 \times 10^{-7}$ )	$1.64 \times 10^{-6}$ *** ( $2.16 \times 10^{-7}$ )	$1.72 \times 10^{-6}$ *** ( $2.98 \times 10^{-7}$ )	$1.62 \times 10^{-6}$ *** ( $2.98 \times 10^{-7}$ )
<i>Competitiveness of District</i>	-0.0119 (0.0132)	-0.0116 (0.0127)	-0.0106 (0.0177)	-0.0091 (0.0177)
<i>Median Income of the District</i>	$6.12 \times 10^{-6}$ * ( $2.97 \times 10^{-6}$ )	$2.88 \times 10^{-6}$ ( $3.57 \times 10^{-6}$ )	$8.89 \times 10^{-6}$ * ( $3.92 \times 10^{-6}$ )	$5.93 \times 10^{-6}$ ( $4.78 \times 10^{-6}$ )
Constant	3.95 *** (0.87)	4.79 *** (1.01)	10.08 *** (1.18)	3.95 *** (0.87)
N	20	19	20	19
$\alpha$	5.376 (1.699)	5.695 (1.855)	3.105 (0.934)	3.116 (0.961)
Log-likelihood	-126.632	-116.898	-282.186	-264.856

VIF <sub>max</sub>	1.125	1.162	1.218	1.299
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1. <sup>+</sup>  $p < 0.1$  \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

2. Standard error in parenthesis

3. Estimated with glmmADMB package in R.

## 5.2 Post-level Analysis

Table 3 and 4 show how the content and characteristics of each post that Candidate W added on its official Facebook website may influence the number of donors and amount of donations in the following several hours, respectively. What kinds of posts can mobilize donors? Surprisingly, both *Public Policy* and *Administration* have a consistently *adverse* effect on attracting donors, which is opposite to *H2*. When controlling all other variables to their median, post with content related to newly announced public policy would decrease the number of total donors after the post from 50 to 31, and the amount of donation from NTD \$98565 to \$72591 ( $p = 0.105$ ). The effect remains strong across in and out-of-district donors, and across pan-green and pan-blue districts. Thus, it is clear that neither public policy nor renewal of administration is more attractive to donors, and the neighboring effect observed in the district-level analysis may not come from the spillover effect of public policy.

Table 3. Negative Binomial Model on Explaining N of Donors after Candidate W's Posts

IV\DV	N of Donors after post	N of Donors from W City	N of Donors out-of-district	Donors from pan-green districts	Donors from pan-blue districts
<i>Public Policy</i>	-0.448 * (0.182)	-0.370 + (0.196)	-0.494 ** (0.187)	-0.434 * (0.183)	-0.498 * (0.229)
<i>Ideology</i>	0.551 * (0.227)	0.557 + (0.244)	0.535 * (0.231)	0.542 * (0.228)	0.432 (0.269)
<i>Campaign Mobilization</i>	0.252 (0.168)	0.355 * (0.182)	0.185 (0.172)	0.282 + (0.170)	0.333 + (0.199)
<i>Self-Promotion</i>	-0.151 (0.162)	-0.173 (0.172)	-0.133 (0.168)	-0.136 (0.162)	-0.145 (0.200)
<i>Administration</i>	-0.684 ** (0.213)	-0.713 ** (0.231)	-0.677 ** (0.220)	-0.674 ** (0.215)	-0.637 * (0.272)
<i>Days before Election</i>	-0.009 ** (0.001) *	-0.008 ** (0.001) *	-0.010 ** (0.001) *	-0.008 *** (0.001)	-0.009 *** (0.002)
<i>Length of Post</i>	$3.5 \times 10^{-5}$ ( $3.7 \times 10^{-5}$ )	$5.4 \times 10^{-5}$ ( $4.1 \times 10^{-5}$ )	$2.4 \times 10^{-5}$ ( $3.7 \times 10^{-5}$ )	$3.8 \times 10^{-5}$ ( $3.6 \times 10^{-5}$ )	$2.5 \times 10^{-5}$ ( $4.5 \times 10^{-5}$ )
Constant	4.39 ** (0.15) *	4.22 ** (0.16) *	4.04 ** (0.15) *	3.87 *** (0.15)	1.84 *** (0.18)
N	296	296	296	296	296
$\alpha$	0.753 (0.055)	0.675 (0.054)	0.713 (0.054)	0.749 (0.056)	0.576 (0.062)
Log-likelihood	-1400.2	-1099.1	-1400.2	-1267.6	-673.4
VIF <sub>max</sub>	1.230	1.226	1.230	1.216	1.131

1. <sup>+</sup>  $p < 0.1$  \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$
2. Standard error in parenthesis
3. Estimated with glmmADMB package in R.

There are two possible explanations for this counter-intuitive phenomenon. Firstly, individual donors are, in general, not the recipient of social welfare. Therefore, Candidate W's left-leaning policy announcement such as social housing or public daycare conflicts with the interests of these potential donors. The district-level analysis in the last section, albeit the threat of geological fallacy, shows that the median income of the district positively correlates with the number of donors and the amount of donation. Secondly, because the majority of candidates in Taiwan election loves to enumerate social welfare policies, so such promises are cliché and less credible. Thus, donors may expect Candidate W to announce something else rather than social welfare policies. However, the demographic background of the donors is needed to test these two extended hypotheses. Existing studies using self-report survey in the U.S. context provide some support to the above argument. For instance, Barber et al. (2014) show that income is a strong predictor on explaining donations to Senate candidates in 2012 Election; another study also conducted by Barber (2016) indicates that policy or material interest are not the main concern among donors in open question.

Table 4. Negative Binomial Model on Explaining Donations after Candidate W's Posts

IV\DV	Sum of Donation after post	Sum of Donation from W City	Sum of Donation out-of-district	Sum of Donation from pan-green districts	Sum of Donation from pan-blue districts
<i>Public Policy</i>	-0.301 (0.189)	-0.254 (0.271)	-0.335 (0.221)	-0.254 (0.200)	-0.655 (0.423)
<i>Ideology</i>	0.569 * (0.232)	0.545 + (0.326)	0.590 * (0.274)	0.591 * (0.245)	-0.191 (0.515)
<i>Campaign Mobilization</i>	0.199 (0.168)	0.265 (0.237)	0.151 (0.197)	0.239 (0.178)	0.181 (0.381)
<i>Self-Promotion</i>	0.080 (0.165)	-0.047 (0.229)	0.165 (0.198)	0.171 (0.174)	0.107 (0.402)
<i>Administration</i>	-0.801 ** (0.220) *	-0.735 ** (0.314)	-0.842 ** (0.261)	-0.785 *** (0.234)	-1.030 * (0.497)
<i>Days before Election</i>	-0.003 * (0.001)	-0.003 (0.002)	-0.003 * (0.002)	-0.003 + (0.002)	-0.004 (0.003)
<i>Length of Post</i>	$1.3 \times 10^{-5}$ ( $4.3 \times 10^{-5}$ )	$2.7 \times 10^{-5}$ ( $5.7 \times 10^{-5}$ )	$-6.4 \times 10^{-7}$ ( $5.3 \times 10^{-5}$ )	$1.2 \times 10^{-5}$ ( $4.5 \times 10^{-5}$ )	$4.5 \times 10^{-5}$ ( $1.3 \times 10^{-4}$ )
Constant	11.7 ** (0.14) *	10.1 ** (0.20) *	11.2 ** (0.17) *	11.2 *** (0.16)	9.33 *** (0.33)
N	296	296	296	296	296
$\alpha$	0.700 (0.049)	0.358 (0.025)	0.499 (0.035)	0.624 (0.044)	0.133 (0.062)

Log-likelihood	-3680.0	-3296.0	-3472.9	-3556.4	-2296.0
VIF <sub>max</sub>	1.126	1.226	1.115	1.125	1.114

1. <sup>+</sup>  $p < 0.1$  \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

2. Standard error in parenthesis

3. Estimated with glmmADMB package in R.

If it is not the public policy and administrative reform, what kinds of Candidate W's post that drive neighboring effect that we observed in district-level? The statistical result in Table 3 alludes one relatively straightforward reason: *because the candidate mobilized them*. One primary difference between the second and third model is the estimated effect of *Campaign Mobilization* (shaded by gray color in the middle of Table 3), coded 1 when the content of Candidate W's post includes the information of campaign rally or calling for donations. The predicted number of donors based on Model 2 will increase from 16 to 23 if residents were mobilized when controlling all other variables at its median. However, such effect does not exist among other districts in Model 3. In other words, the neighboring effect of donation may base on how individuals can actually feel, encounter, and even engage in the campaign events - the donations are donors' commitment to let them feel they are part of the rally. Such feeling of engagement decreases sharply for those who lives outside the district and can only participate the campaign through mass media or social network sites. Similarly, the sense of engagement can also help explain the consistently negative effect on donations and days before the election. When the Election Day gets closer, even though the expected outcome of the election remains the same, people tend to do something to ensure that they are part of the game. Gerodimos and Justinussen's study (2015) on Obama's Facebook strategy also showed that his supporters were quite responsive to Obama's call for action - the number of shares doubled if Obama asked supporters to do so, which help facilitate the sense of belonging. The result here echoes the previous findings, but this time, it appears in a local election.

Once again, the post-level analysis reaffirms the influence of *Ideology* on raising funds (Sides and Farrell 2010; Hong 2013; Barber et al. 2014; Barber 2016). However, the distinct feature of the evidence provided here is that the outcome (donations) was directly measured in only a few hours after the treatment (ideological declaration). Among all districts during the campaign, the number of donors will increase from 50 to 84, and the amount of donation from NTD \$98565 to \$171600, after Candidate W posted paragraphs related to the fighters of autonomy during colonial periods, pro-independence, or supporting anti-China social movements. Who responded within few hours to Candidate W's ideological declaration? In the last two columns in both Table 3 and Table 4, it is clear that donors in pan-green districts were mobilized after seeing the posts. Among the pan-green districts where the pan-green candidate received 55 percent or more in 2014 election, Candidate W's post can boost the number of donors from 30 to 51, and the amount of donation from NTD \$64326 to \$ 114765. In contrast, the effect of ideological content does not exist among pan-blue districts. If we agree with the

assumption that donors in the pan-green district are much likely to own pan-green ideology (since the level of competitiveness is not influential in the district-level analysis), this post-level analysis reveals that it is Candidate W's ideological position that attracts donations from its ideological allies effectively. The result here provides another direct evidence linking candidates' ideological appeals to donors' motivation.

If we juxtapose Table 3 and Table 4, there is a clear pattern that the amount of donation after the posts are harder to explain. The result not only fits previous findings based on U.S. context (Barber et al. 2014) but also points out one possible direction for future research. It may be possible that individual's donation behavior is, in fact, two steps: The first step is whether to donate (after being mobilized by the candidate) or not, and the second step is how much is enough for influencing the result of an election or for feeling engagement. This two-step hypothesis is worth exploring in the future.

## **6. Conclusion**

By combining the detail donation data and candidate's posts during the campaign in Taiwan election, this article makes several contributions on campaign financing, donation, and online politics. First of all, candidate's ideological post can indeed attract more donors and money from districts with more ideological allies within few hours. Compared with previous studies matching donor's policy preference and candidate's roll-call voting (Barber et al 2014) or linking total donations to result of past election (Gimpel et al 2006), the evidence provided in this article give us more confidence that people are willing to pay more than his transportation cost in the Election Day because of their ideological pursuit. When donors clicked the donation button, they were thinking of candidate's ideological speech posted on his or her website hours ago.

Meanwhile, residents and who lives nearby the district are much likely to donate, but the reason is not related to the spillover effect of public policy. At least in this Taiwanese case, the expected utility of new public policy proposal to donors are *negative* and will reduce their tendency to donate. Instead, the statistical results suggest that the neighboring effect exists because these people are much likely to participate physically in the campaign. This exploratory finding suggests one while rejecting another one explanation of neighboring effect widely found in the district-level geographical analysis (Gimpel et al. 2006; 2008).

Third, content matters. In recent years, more and more candidates and politicians use Facebook and Twitter to interact with voters (Williams and Gulati 2012). Some preliminary studies find that the more one tweeted, the more ballots and donations the candidate will get on the Election Day, especially the extreme ideological ones (Hong 2013; Lassen and Egar 2013). However, the result provided in Table 3 and 4 improves our understanding of the psychological mechanism linking post/tweet and donations and shows that different posts will have distinct effects on attracting donations. Therefore, what candidate posts is by nature a strategic consideration. If there are a more ideologically extreme candidate running in elections and posting ideological appeals, it is

not surprising that more funding goes to this extreme candidate (Raja and Wiltse 2011). Future study can focus on not only what candidates posted, but also what candidates interacted with each other through social network sites, and their effect on vote share as well as donations.

Fourth, the ideological appeals to inter-district donation serve as a lens to observe the process of party nationalization and emerge of new parties. Rokkan (1970) and Clagget et al.(1983) suggest that parties usually arise in few areas, but will gradually penetrate across districts. When a party has enough supporters in all districts, the party has more incentive to provide the policies taking care of the whole country instead of specific areas, which is beneficial to democracy. Recent studies on party nationalization focus on the measure of nationalization and its change (e.g. Morgenstern et al. 2009). The evidence in this article suggests that candidate in one district can indeed receive support from his or her ideological allies in other districts. In other words, people are willing to devote into spreading preferred ideology across the districts. That is the micro-foundation of party nationalization.

In the end, this article can shed light on online campaigning and micro-targeting. In this Taiwan case, ideological allies are much likely to be mobilized if they lived in the districts where the majority are also on the same side. When calling for action, residents and those who lived nearby are easier to be mobilized if they received information about the campaign rally or local event. The rationality behind public policy and administrative reform is questioned by this article.

Unfortunately, the two datasets and analyses this article featured also suffered from several weaknesses. Firstly, we only have datasets from the one side, so we failed to capture the dynamic between the candidates. Even though in both Table 3 and four the *Self-Promotion* did not significantly influence the donation, the previous study also suggests that people would strategically donate based on poll results (Mutz 1995). It is intuitive to believe that supporters will try to help their preferred candidate who is under attack, but the data used here did not provide clear evidence. If we have data from more than one districts, we can test whether the “crowding out effect” exists among donations to the same-party candidates across districts. Secondly, in the datasets only donor’s address and amount of donation are recorded, so numerous possible confounding variables are emitted in our analyses. As a result, we cannot further explore the motivation behind donations among different people. It can also be possible that Candidate W’s posts were attractive to various groups of people; different post mobilize different people, and there is nothing called “decrease” or “increase.” Owing to lack of data and to simplifying our hypotheses, in this article, we naively assume that all potential donors will be mobilized based on the same economic and psychological mechanism. Future work with better data can test the validity of this assumption. Last but not least, we assume that the donations after each post are mobilized by that post. This assumption can be challenged in two directions. On the one hand, it can highly be possible that individual went through the whole Facebook timeline then decided to

donate. Therefore, some posts may have stronger and lasting influence than the others. On the other hand, it can also be possible that the candidate and his or her campaign team will analyze the donation data every hour, and then decide what to post next. In Figure 1, there is a small hill around 10 to 12 hours, implying that Candidate W posted the article right after donors submitted the donation. The hill may be because Candidate W selected the time of posting when more supporters are online. Even though studies on politicians and social network sites explicitly or implicitly assume that a social network site is a top-down tool (e.g. Gerodimos and Justinussen 2015), can netizens also directly or indirectly influence what and how politician posts online? This dynamic remains to be further investigated.

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